Claims

1. Method for quick access to data networks (INT), in which data
   terminal devices (D1, D2, D3) of subscribers are each connected
5   by means of a modem (M1, M2, M3) respectively by way of a digital
   subscriber line (DSL1, DSL2, DSL3) respectively to an access
   multiplexer (DSLAM), whereby for the purposes of data transfer
   between the data terminal devices (D1, D2, D3) and an access
   server (B-RAS) which is located downstream of the access
10   multiplexer (DSLAM), which serves to check the access
   authorization of the data terminal devices (D1, D2, D3) and
   establish the access to the data network (INT), the Point-to-
   Point Protocol over Ethernet PPPoE is used,
   characterized in that
15   the link from the access multiplexer (DSLAM) to the access server
   (B-RAS) and to further components located downstream is
   implemented by means of an Ethernet network (ETH).

2. Method according to Claim 1,
20   characterized in that
   an Ethernet bridge (EB) is assigned to the access multiplexer
   (DSLAM) or is integrated into the access multiplexer (DSLAM),
   where the Ethernet bridge (EB) is equipped with filtering
   facilities through which the PPPoE headers contained in received
25   Ethernet frames are evaluated and whereby:
   - Ethernet frames are routed to the Ethernet bridge (EB) if the
     PPPoE header can be assigned to an existing connection confirmed
     by the access server (B-RAS), or if the PPPoE header can be
     assigned to connection which is set up, whereby a timer is
30   started when the connection is set up and when the timer times
     out the MAC address of the sending Ethernet component is removed
     from the routing tables of the Ethernet bridge (EB) provided that
     no confirmation of the connection set-up is given by the access
     server (B-RAS) before the timer times out, and
35 - all other Ethernet frames which contain a PPPoE header are
     discarded, and
   - all Ethernet frames which do not contain a PPPoE header are
     discarded.

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3. Method according to one of Claims 1 or 2,
   characterized in that
   Ethernet frames are discarded randomly or specifically selected
   for the data transfer direction toward the data terminal device
5 (D1, D2, D3) in a receive buffer of an Ethernet interface through
   which the access multiplexer (DSLAM) is connected to the Ethernet
   network (ETH), on the basis of the load status of send buffers
   which are assigned to the digital subscriber lines (DSL1, DSL2,
   DSL3).

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4. Method according to Claim 3,
   characterized in that
   Ethernet frames to be assigned to the respective digital
   subscriber line (DSL1, DSL2, DSL3) are discarded if a send buffer
15 overload condition on the digital subscriber line (DSL1, DSL2,
   DSL3) is predicted by a control logic circuit.

5. Method according to one of Claims 3 or 4,
   characterized in that
20 connection control frames which can be recognized on the basis of
   their Ethernet header are not discarded.

6. Method according to one of Claims 1 to 5,
   characterized in that
25 the data network (INT) is the Internet.

7. Access multiplexer (DSLAM) for quick access to data networks
   (INT), to which data terminal devices (D1, D2, D3) of subscribers
   are each connected by means of a modem (M1, M2, M3) respectively
30 by way of a digital subscriber line (DSL1, DSL2, DSL3)
   respectively, whereby for the purposes of data transfer between
   the data terminal devices (D1, D2, D3) and an access server (B-
   RAS) which is located downstream of the access multiplexer
   (DSLAM), which serves to check the access authorization of the
35 data terminal devices (D1, D2, D3) and establish the access to
   the data network (INT), the Point-to-Point Protocol over Ethernet
   PPPoE is used,
   characterized in that

the access multiplexer (DSLAM) is connected to the access server
(B-RAS) and to further components located downstream by means of
an Ethernet network (ETH).

5   8. Access multiplexer (DSLAM) according to Claim 7,
        characterized in that
        the access multiplexer has an Ethernet bridge (EB), whereby the
        Ethernet bridge (EB) has filtering facilities for evaluating the
        PPPoE headers contained in received Ethernet frames, and whereby:
10 -   Ethernet frames are routed to the Ethernet bridge (EB) if the
        PPPoE header can be assigned to an existing connection confirmed
        by the access server, or if the PPPoE header can be assigned to
        connection which is set up, whereby a timer is started when the
        connection is set up and when the timer times out the MAC address
15   of the sending Ethernet component is removed from the routing
        tables of the Ethernet bridge (EB) provided that no confirmation
        of the connection set-up is given by the access server (B-RAS)
        before the timer times out, and
    -   all other Ethernet frames which contain a PPPoE header are
20   discarded, and
    -   all Ethernet frames which do not contain a PPPoE header are
        discarded.

    9. Access multiplexer (DSLAM) according to one of Claims 7 or 8,
25   characterized in that
        the access multiplexer (DSLAM) has means offering overload
        protection for the data transfer direction toward the data
        terminal device (D1, D2, D3), which comprise means for monitoring
        a receive buffer of an Ethernet interface through which the
30   access multiplexer (DSLAM) is connected to the Ethernet network
        (ETH), as well as means for monitoring the load status of send
        buffers which are assigned to the digital subscriber lines (DSL1,
        DSL2, DSL3), and also means for the random or specific selection
        and discard of Ethernet frames.
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    10. Access multiplexer (DSLAM) according to Claim 9,
        characterized in that
        the access multiplexer (DSLAM) has a control logic circuit with
        means for predicting an overload condition for the send buffer of

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the digital subscriber line (DSL1, DSL2, DSL3) and means for
influencing the receive buffer in order to discard Ethernet
frames which are to be assigned to the respective digital
subscriber line (DSL1, DSL2, DSL3).

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11. Access multiplexer (DSLAM) according to one of Claims 9 or 10,
    characterized in that
    the control logic circuit of the access multiplexer (DSLAM) has
    means for the identification of connection control frames on the
10 basis of their Ethernet header and means for influencing the
    receive buffer such that connection control frames are not
    discarded.